CLAIMS

1. A ceramifying composition for forming a fire resistant ceramic under fire conditions the composition comprising:

(i) at least 10% by weight of mineral silicate;

(ii) from 8 % to 40 % by weight of at least one inorganic phosphate that forms a liquid phase at a temperature of no more than 800°C; and

(iii) at least 15% by weight based on the total weight of the composition of a polymer base composition comprising at least 50% by weight of an organic polymer;

2. A ceramifying composition according to claim 1 wherein the composition forms a self-supporting ceramic on exposure to an elevated temperature experienced under fire conditions.

3. A ceramifying composition for forming a fire resistant ceramic under fire conditions the composition consisting essentially of:

i. at least 15% by weight based on the total weight of the composition of a polymer base composition comprising at least 50% by weight of an organic polymer;

(ii) 8-40% by weight of at least one inorganic phosphate that forms a liquid phase at a temperature of no more than 800°C (preferably no more than 500°C) based on the total weight of the composition,

(iii) at least 10% by weight based on the total weight of the composition of silicate mineral;

(iv) optionally additional inorganic filler in an amount of up to 30%; and

wherein the composition forms a self-supporting ceramic on exposure to an elevated temperature experienced under fire conditions.

4. A ceramifying composition according to claim 1 or claim 3 wherein on exposure to an elevated temperature experienced under fire conditions a

rectangular test specimen of the ceramifying composition undergoes less than a 20% change in linear dimensions along its length.

5. A ceramifying composition according to claim 1 or claim 3 wherein on exposure to an elevated temperature experienced under fire conditions a rectangular said test specimen of the composition undergoes less than a 10% change in linear dimensions along its length.

6. A ceramifying composition according to claim 1 or claim 3 wherein on exposure to an elevated temperature experienced under fire conditions a rectangular test specimen of the ceramifying composition undergoes less than a 5% change in linear dimensions along its length.

7. A ceramifying composition according to claim 1 or claim 4 wherein on exposure to an elevated temperature experienced under fire conditions a rectangular test specimen of the composition undergoes less than a 1% change in linear dimensions along its length.

8. A ceramifying composition according to any one of claims 1 to 3 wherein inorganic components are present in an amount of at least 40% by weight based on the total weight of the composition.

9. A ceramifying composition according to any one of claims 1 to 3 wherein inorganic components are present in an amount of at least 60% by weight based on the total weight of the composition.

10. A ceramifying composition according to any one of claims 1 to 3 wherein inorganic components are present in an amount of at least 70% by weight based on the total weight of the composition.

11. A ceramifying composition according to claim 1 wherein ammonium polyphosphate is present in an amount of from 20 to 40% by weight of the total composition.

12. A ceramifying composition according to claim 1 or claim 3 wherein the mineral silicate is present in an amount of at least 15% by weight of the total composition.

13. A ceramifying composition according to claim 1 or claim 3 wherein the composition further comprises an additional inorganic filler component comprising at least one compound selected from the group consisting of oxides, hydroxides and carbonates of aluminium, magnesium and calcium, the total of said additional inorganic filler constituting up to 20% by weight of the total ceramifying composition.

14. A ceramifying composition according to claim 13 wherein additional inorganic filler comprises at least one compound selected from the group consisting of magnesium hydroxide, alumina trihydrate, magnesium carbonate and calcium carbonate and is present in an amount of from 5 to 20% by weight of the total ceramifying composition.

15. A ceramifying composition according to claim 1 or claim 3 wherein the composition comprises calcium carbonate in an amount of from 5 to 20% by weight of the total composition.

16. A ceramifying composition according to claim 1 or claim 3 wherein the organic polymer comprises at least one polymer selected from the group consisting of thermoplastic polymers, thermoset polymers, thermoplastic elastomers, cross linked elastomers and rubber.

17. A ceramifying composition according to claim 16 wherein the organic polymer comprises at least one polymer selected from the group consisting of thermoplastic and crosslinked polyethylenes and copolymers and blends thereof wherein the polymer has a density in the range of from 890 to 960 g/litre.

18. A ceramifying composition according to claim 1 or claim 3 which is essentially free of intumescing agents for expanding an inorganic foam.

19. A cable comprising at least one elongated functional element and at least one insulating layer comprising the ceramifying composition of claim 1 or claim 3.

20. A cable according to claim 19 wherein the cable comprises a single insulating layer about the elongated functional element said insulating layer comprising the ceramifying composition according to claim 1 or claim 3.

21. A cable according to claim 20 wherein the ceramifying single insulating layer has an inner surface abutting the functional element and a free outer surface.

22. A cable according to claim 21 wherein the single insulating layer has an outer surface free of coatings.

23. A cable according to claim 19 wherein the single insulating layer forms a self-supporting ceramic on exposure to an elevated temperature experienced under fire conditions.

24. A cable according to claim 19 wherein the single insulating layer composition when formed into a rectangular test specimen undergoes less than 20% change in linear dimensions along its length on exposure to an elevated temperature experienced under fire conditions.

25. A cable according to claim 19 wherein the ammonium polyphosphate is present in an amount in the range of from 8 to 20% by weight of the total ceramifying composition.

26. A cable according to claim 19 wherein the ceramifying composition comprises 5 to 20% additional inorganic filler comprising at least one compound

selected from the group consisting of magnesium hydroxide, alumina trihydrate, magnesium carbonate and calcium carbonate.

27. A ceramifying composition according to claim 1 or claim 3 wherein a rectangular test specimen of the ceramifying composition has a flexural strength of at least 0.3 MPa on exposure to an elevated temperature experienced under fire conditions.

28. A ceramifying composition according to claim 27 wherein the flexural strength is at least 1 MPa on exposure to an elevated temperature experienced under fire conditions.

29. A ceramifying composition according to claim 27 wherein the flexural strength is at least 2 MPa on exposure to an elevated temperature experienced under fire conditions.

30. A fire resistant product formed from or containing the compositions of claim 1 or claim 3.

31. A fire resistant product of claim 30, used in passive fire protection applications and generally engineering applications where passive fire protection properties are required.

32. A ceramifying composition according to claim 1 wherein the organic polymer comprises at least one of homopolymer or copolymer or elastomer or resin of polyolefins, ethylene-propylene rubber, ethylene-propylene terpolymer rubber (EPDM), chlorosulfonated polyethylene and chlorinate polyethylene, vinyl polymers, acrylic and methacrylic polymers, polyamides, polyesters, polyimides, polyoxymethylene acetals, polycarbonates, polyurethanes, natural rubber, butyl rubber, nitrile-butadiene rubber, epichlorohydrin rubber, polychloroprene, styrene polymers, styrene-butadiene, styrene-isoprene-styrene, styrene-butadiene-styrene, styrene-ethylene-butadiene-styrene, epoxy

resins, polyester resins, vinyl ester resins, phenolic resins, and melamine formaldehyde.